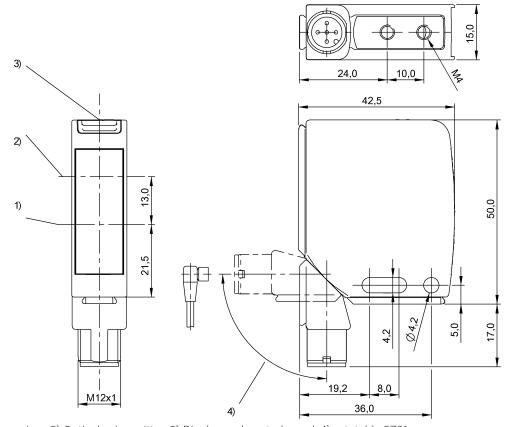
BALLUFF



1) Optical axis receiver, 2) Optical axis emitter, 3) Display and control panel, 4) rotatable 270°









Basic features

Application Distance measurement Approval/Conformity CE UKCA cULus WEEE Basic standard IEC 60947-5-2, IEC 60947-5-7 Principle of operation Photoelectric distance sensor Series 21M Style Square Connection can be rotated

Display/Operation

Adjuster Rotary switch 5 positions Display Output function Output 1 - LED yellow LED green: Power Setting Rated switching distance (Sn) Working range

Electrical connection

Connection Connector, M12x1-Male, 5-pin Gold plated Contact, surface protection Polarity reversal protected yes Short-circuit protection yes

Photoelectric Sensors

BOD 21M-LA04-S92 Order Code: BOD000N



Electrical data

Load capacitance max. at Ue 0.1 µF Load resistance RL min. (Analog V) 2 kOhm No-load current lo max. at Ue 50 mA Operating voltage Ub 18...30 VDC Rated insulation voltage Ui 75 V DC 100 mA Rated operating current le Rated operating voltage Ue DC 24 V Ready delay tv max. 300 ms Ripple max. (% of Ue) 15% Switching frequency 70 Hz Turn-off delay toff max. 7 ms Turn-on delay ton max. 7 ms Utilization category DC -13 Voltage drop Ud max. at le 2 V

Environmental conditions

Ambient temperature -10...50 °C

Contamination scale 3

EN 60068-2-27, Shock Half-sinus, 30 g_n, 11 ms, 3x6

EN 60068-2-6, Vibration 10...55 Hz, amplitude 0.5 mm,

3x30 min

IP rating IP67

Functional safety

MTTF (40 °C) 69 a

Interface

Analog output Analog, voltage 1...10 V

Output characteristic linear increasing

Switching output 2x PNP/NPN NO/NC push-pull

Material

Housing material Zinc, Die casting
Aluminium

Material sensing surface Glass

Mechanical data

 $\begin{array}{ll} \textbf{Dimension} & 15 \times 42.5 \times 50 \text{ mm} \\ \textbf{Distance deviation 6 \% max. (\% of Sr)} & 1.5 \% \\ \textbf{Mounting part} & Screw M4 \\ \end{array}$

Optical features

Ambient light max. 5000 Lux

Average power Po max. 1 mW

Beam characteristic Collimated

Laser class per IEC 60825-1 2 Light spot size 1

 Light spot size
 1 x 6 mm at 500 mm

 Light type
 Laser red light

 Principle of optical operation
 Triangulation

 Pulse duration t max.
 3000 µs

 Pulse power Pp max.
 1.2 mW

Switching function, optical Light/dark switching

Wave length 650 nm

Range/Distance

Accuracy $\pm 3 \% FS$ Hysteresis H max. (% of Sr) 6.0 %

 Range
 20...500 mm, adjustable

 Rated operating distance Sn
 500 mm, Adjustable

 Repeat accuracy
 1 % FS (< 200 mm)</td>

 3 % (200...500 mm)
 100...500 μm

Remarks

Order accessories separately.

The push-pull switching outputs must not be connected in parallel.

The sensor is functional again after the overload has been eliminated.

Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.

Full accuracy after warmup phase

Only for applications per NFPA 79 (machines with a supply voltage of maximum 600 V). Use an R/C (CYJV2) cable with suitable properties for attaching the device

For additional information, refer to user's guide.

For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

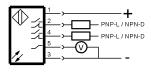
BOD 21M-LA04-S92 Order Code: BOD000N

BALLUFF

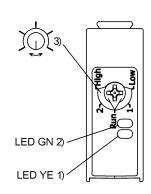
Connector Drawings



Wiring Diagrams (Schematic)



Help Views



- 1) Output function
- 2) Stability
- 3) Teach-in Sn, WR

Opto Symbols



Subject to change without notice: 281426

Photoelectric Sensors
BOD 21M-LA04-S92
Order Code: BOD000N



Warning Symbols



LASER BEAM - DO NOT STARE INTO THE LIGHT BEAM!

LASER CLASS 2 per IEC60825-1: 2003-10